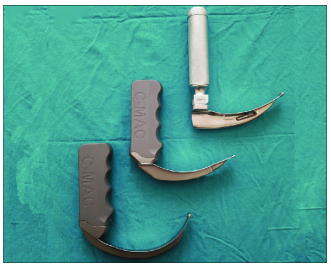
№ 194

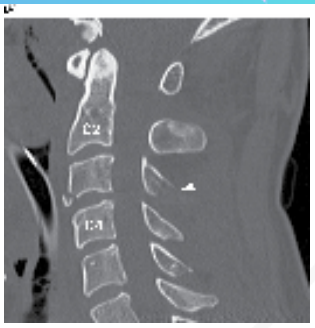
Challenges in Managing the Airway of A Cervical Injury Patient

Nur Athirah binti Abdul Hakim Lim , Hospital Raja Permaisuri Bainun

Introduction

Airway protection is a crucial part of resuscitation. In patients with suspected cervical spine injury, maintaining airway patency is particularly challenging due to the need to minimize cervical movement.





Case Description

An 84-year-old man presented to the emergency department after a motor vehicle accident, complaining of neck pain and shortness of breath. He was agitated and had stridor. Due to airway compromise, intubation was planned. His initial oxygen saturation was 39%. Pre-oxygenation was started using a bag-valve mask and nasal cannula at 15 L/min, achieving a saturation range of 40–80%.
Intubation was performed with manual in-line stabilization using a C-MAC video laryngoscope (blade size 3) and a bougie. A crowded airway with edematous vocal cords was seen, with less than 25% glottic opening. The procedure was complicated by a peri-intubation cardiac arrest. A cervical CT scan revealed C2–C4 fractures with mild spinal canal narrowing.

Discussion

Difficult airway anticipation should include preparing for a surgical airway in case orotracheal intubation fails. Cervical injury limits neck movement, making intubation more difficult. Videolaryngoscopy is often preferred over direct laryngoscopy, combined with manual in-line stabilization to reduce cervical motion.

Blade selection is important; curved blades like the C-MAC D-blade offer better glottic visualization with less neck extension. Reducing intubation attempts helps prevent worsening of airway edema.

Pre-oxygenation with positive end-expiratory pressure (PEEP), using a bag-valve mask and nasal cannula, increases oxygen reserves, prevents atelectasis, and prolongs safe apnea time. In some settings, awake intubation using a flexible bronchoscope may be considered if the patient is cooperative.

Conclusion

Effective airway management in cervical trauma requires anticipation, preparation, and optimization to reduce the risk of peri-intubation cardiac arrest.

Keyword: airway, difficult intubation, cervical injury
Reference Difficult Airway Society et al. (2024) UK guidelines on Airway management in patients with suspected or confirmed cervical spine injury highlight: use of videolaryngoscopy (Grade A), jaw-thrust instead of head-tilt, removal of anterior neck collar piece, and use of bougie or stylet to assist intubation